CHEMISTRY

Haloalkanes and Haloarenes

Speed TEST 52 Chapter-wise

No. of Questions	Maximum Marks	Time
45	180	1 Hour

GENERAL INSTRUCTIONS

- This test contains 45 MCQ's. For each question only one option is correct. Darken the correct circle/ bubble in the Response Grid provided on each page.
- You have to evaluate your Response Grids yourself with the help of solutions provided at the end of this book.
- Each correct answer will get you 4 marks and 1 mark shall be deduced for each incorrect answer. No mark will be given/ deducted if no bubble is filled. Keep a timer in front of you and stop immediately at the end of 60 min.
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1. *o*-Methoxybromobenzene is treated with sodamide and then with ammonia. The product formed is
(a) *o*-Methoxyaniline (b) Aniline
(c) Methoxybenzene (d) *m*-Methoxyaniline

2. Gem-dibromide is
(a) $CH_3CH(Br)CH_2(Br)$ (b) $CH_3CBr_2CH_3$
(c) $CH_2(Br)CH_2CH_2$ (d) CH_2BrCH_2Br

3. Arrange the following compounds in order of increasing dipole moment :
Toluene (I)
m-dichlorobenzene (II)
o-dichlorobenzene (III)
p-dichlorobenzene (IV)
(a) I < IV < II < III (b) IV < I < II < III
(c) IV < I < III < II (d) IV < II < I < III

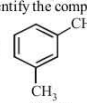
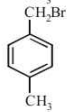
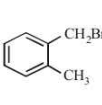
4. The compound formed on heating chlorobenzene with chloral in the presence of concentrated sulphuric acid, is
(a) freon (b) DDT
(c) gammexene (d) hexachloroethane

5. Which among MeX, RCH_2X, R_2CHX and R_3CX is most reactive towards S_N2 reaction?
(a) MeX (b) RCH_2X
(c) R_2CHX (d) R_3CX

6. In the preparation of chlorobenzene from aniline, the most suitable reagent is
(a) Chlorine in the presence of ultraviolet light
(b) Chlorine in the presence of $AlCl_3$
(c) Nitrous acid followed by heating with Cu_2Cl_2
(d) HCl and Cu_2Cl_2

7. On sulphonation of C_6H_5Cl
(a) *m*-Chlorobenzenesulphonic acid is formed
(b) Benzenesulphonic acid is formed
(c) *o*-Chlorobenzenesulphonic acid is formed
(d) *o*- and *p*-Chlorobenzenesulphonic acid is formed

8. Compound (A), C_8H_9Br, gives a white precipitate when warmed with alcoholic $AgNO_3$. Oxidation of (A) gives an acid (B), $C_8H_6O_4$. (B) easily forms anhydride on heating. Identify the compound (A).

(a) 
(b) 
(c) 
(d) 

RESPONSE GRID	1. (a)(b)(c)(d)	2. (a)(b)(c)(d)	3. (a)(b)(c)(d)	4. (a)(b)(c)(d)	5. (a)(b)(c)(d)
	6. (a)(b)(c)(d)	7. (a)(b)(c)(d)	8. (a)(b)(c)(d)		

Space for Rough Work

9. The reaction of $C_6H_5N_2^+Cl^-$ with CuCl gives

(a) C_6H_5Cl (b) C_6H_6

(c) $C_6H_5-C_6H_5$ (d) $C_6H_4Cl_2$

10. Conant Finkelstein reaction for the preparation of alkyl iodide is based upon the fact that

(a) Sodium iodide is soluble in methanol, while sodium chloride is insoluble in methanol

(b) Sodium iodide is soluble in methanol, while NaCl and NaBr are insoluble in methanol

(c) Sodium iodide is insoluble in methanol, while NaCl and NaBr are soluble

(d) The three halogens differ considerably in their electronegativity

11. Tertiary alkyl halides are practically inert to substitution by S_N2 mechanism because of

(a) steric hindrance (b) inductive effect

(c) instability (d) insolubility

12. Which one is most reactive towards S_N1 reaction ?

(a) $C_6H_5CH(C_6H_5)Br$ (b) $C_6H_5CH(CH_3)Br$

(c) $C_6H_5C(CH_3)(C_6H_5)Br$ (d) $C_6H_5CH_2Br$

13. The major product of the following reaction is :

$$CH_3CHCH_2CHCH_2CH_3 \xrightarrow[\text{heat}]{KOH,CH_3OH}$$

(a) $CH_2=CHCH_2CH=CHCH_3$

(b) $CH_2=CHCH=CHCH_2CH_3$

(c) $CH_3CH=C=CHCH_2CH_3$

(d) $CH_3CH=CH-CH=CHCH_3$

14. Which of the following is an example of S_N2 reaction?

(a) $CH_3Br + OH^- \longrightarrow CH_3OH + Br^-$

(b) $CH_3-\underset{Br}{CH}-CH_3 + OH^- \longrightarrow CH_3-\underset{OH}{CH}-CH_3$

(c) $CH_3CH_2OH \xrightarrow{-H_2O} CH_2=CH_2$

(d) $(CH_3)_3C-Br + OH^- \longrightarrow (CH_3)_3COH + Br^-$

15. What would be the product formed when 1–bromo–3–chlorocyclobutane reacts with two equivalents of metallic sodium in ether?

(a) 

(b) 

(c) 

(d) 

16. Chlorination of toluene in the presence of light and heat followed by treatment with aqueous NaOH gives

(a) *o*-Cresol (b) *p*-Cresol

(c) 2,4-Dihydroxytoluene (d) Benzoic acid

17. The starting substance for the preparation of iodoform is any one of the following, except

(a) $CH_3CH(OH)CH_3$ (b) CH_3CH_2OH

(c) HCH_2OH (d) CH_3COCH_3

18. The following reaction proceeds through the intermediate

$$RCOOAg + Br_2 \longrightarrow RBr + CO_2 + AgBr$$

(a) $RCOO^\bullet$ (b) $R^\bullet$ (c) $Br^\bullet$ (d) All

19. The major product of the following reaction is :

$$C_6H_5CH_2-\underset{Br}{\overset{CH_3}{\overset{|}{\underset{|}{C}}}}-CH_2-CH_3 \xrightarrow[C_2H_5OH]{C_2H_5ONa}$$

(a) $C_6H_5CH_2-\underset{OC_2H_5}{\overset{CH_3}{\overset{|}{\underset{|}{C}}}}-CH_2-CH_3$

(b) $C_6H_5CH=\underset{CH_3}{C}-CH_2-CH_3$

(c) $C_6H_5CH_2-\underset{CH_3}{C}=CHCH_3$

(d) $C_6H_5CH_2-\underset{CH_2CH_3}{C}=CH_2$

20. The reaction :

$$C_2H_5OH + SOCl_2 \xrightarrow{\text{Pyridine}} C_2H_5Cl + SO_2 + HCl$$

is known as

(a) Kharasch effect (b) Williamson's synthesis

(c) Darzen's procedure (d) Hunsdiecker reaction

21. If chloroform is left open in air in the presence of sunlight, it gives

(a) carbon tetrachloride (b) carbonyl chloride

(c) mustard gas (d) lewisite

22. In the following reaction sequence :

$$\underset{(C_3H_6Cl_2)}{I} \xrightarrow{KOH(aq)} II \xrightarrow[(ii)\ H_2O/H^+]{(i)\ CH_3MgBr} III$$

$$\xrightarrow{\text{Anhy. } ZnCl_2 + \text{Conc. } HCl} \underset{\text{immediately}}{\text{given turbidity}}$$

The compound I is :

(a) $CH_2-\underset{Cl}{CH}-CH_3$ (b) $\underset{Cl}{CH_2}-CH_2-\underset{Cl}{CH_3}$

(c) $CH-\underset{Cl}{CH}-CH_2-CH_3$ (d) $CH_3-\underset{Cl}{\overset{Cl}{\overset{|}{\underset{|}{C}}}}-CH_3$

RESPONSE GRID					
	9. (a)(b)(c)(d)	10. (a)(b)(c)(d)	11. (a)(b)(c)(d)	12. (a)(b)(c)(d)	13. (a)(b)(c)(d)
	14. (a)(b)(c)(d)	15. (a)(b)(c)(d)	16. (a)(b)(c)(d)	17. (a)(b)(c)(d)	18. (a)(b)(c)(d)
	19. (a)(b)(c)(d)	20. (a)(b)(c)(d)	21. (a)(b)(c)(d)	22. (a)(b)(c)(d)	

Space for Rough Work

23. Mg reacts with RBr best in
(a) $C_2H_5OC_2H_5$ (b) $C_6H_5OCH_3$
(c) $C_6H_5N(CH_3)_2$ (d) Equally in all the three

24. Which chloride is least reactive with the hydrolysis point of view?
(a) CH_3Cl (b) CH_3CH_2Cl
(c) $(CH_3)_3CCl$ (d) $CH_2=CH-Cl$

25. $CH_3-CH_2-\underset{Cl}{CH}-CH_3$ obtained by chlorination of n-butane, will be
(a) *l*-form (b) *d*-form
(c) Meso form (d) Racemic mixture

26. The reaction of toluene with Cl_2 in presence of $FeCl_3$ gives 'X' and reaction in presence of light gives 'Y'. Thus, 'X' and 'Y' are:
(a) X = Benzal chloride, Y = *o* – Chlorotoluene
(b) X = *m* – Chlorotoluene, Y = *p* – Chlorotoluene
(c) X = o –and *p* – Chlorotoluene, Y = Trichloromethylbenzene
(d) X = Benzyl chloride, Y = *m* – Chlorotoluene

27. Which reagent cannot be used to prepare an alkyl halide from an alcohol ?
(a) $HCl + ZnCl_2$ (b) NaCl (c) PCl_5 (d) $SOCl_2$

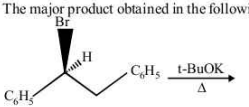
28. A is an optically inactive alkyl chloride which on reaction with aqueous KOH gives B. B on heating with Cu at 300°C gives on alkene C, what are A and C
(a) CH_3CH_2Cl, $CH_2=CH_2$
(b) Me_3CCl, MeCH=CH.Me
(c) Me_3CCl, $Me_2C=CH_2$
(d) $Me_2CH.CH_2Cl$, $Me_2C=CH_2$

29. $CH_3Br + Nu^- \longrightarrow CH_3-Nu + Br^-$ The decreasing order of the rate of the above reaction with nucleophiles (Nu^-) A to D is
[Nu^- = (A) PhO^-, (B) AcO^-, (C) HO^-, (D) CH_3O^-]
(a) A > B > C > D (b) B > D > C > A
(c) D > C > A > B (d) D > C > B > A

30. Which of the following will have a mesoisomer also?
(a) 2, 3- Dichloropentane (b) 2, 3-Dichlorobutane
(c) 2-Chlorobutane (d) 2-Hydroxypropanoic acid

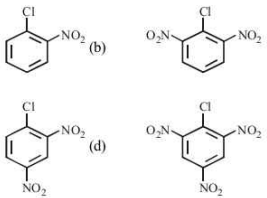
31. The major product formed when 1, 1, 1-trichloro-propane is treated with aqueous potassium hydroxide is:
(a) Propyne (b) 1-Propanol
(c) 2-Propanol (d) Propionic acid

32. The major product obtained in the following reaction is :



(a) $(\pm)C_6H_5CH(O^tBu)CH_2C_6H_5$
(b) $C_6H_5CH=CHC_6H_5$
(c) $(+)C_6H_5CH(O^tBu)CH_2C_6H_5$
(d) $(-)C_6H_5CH(O^tBu)CH_2C_6H_5$

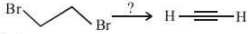
33. A major component of Borsch reagent is obtained by reacting hydrazine hydrate with which of the following ?



34. Bottles containing C_6H_5I and $C_6H_5CH_2I$ lost their original labels. They were labelled A and B for testing. A and B were separately taken in test tubes and boiled with NaOH solution. The end solution in each tube was made acidic with dilute HNO_3 and then some $AgNO_3$ solution was added. Substance B gave a yellow precipitate. Which one of the following statements is true for this experiment ?
(a) A and $C_6H_5CH_2I$
(b) B and C_6H_5I
(c) Addition of HNO_3 was unnecessary
(d) A was C_6H_5I

35. Aryl fluoride may be prepared from arene diazonium chloride using :
(a) HBF_4/Δ (b) $HBF_4/NaNO_2, Cu, \Delta$
(c) CuF/HF (d) Cu/HF

36. The reagent(s) for the following conversion,



is/are
(a) alcoholic KOH
(b) alcoholic KOH followed by $NaNH_2$
(c) aqueous KOH followed by $NaNH_2$
(d) Zn/CH_3OH

37. An organic compound A (C_4H_9Cl) on reaction with Na/diethyl ether gives a hydrocarbon which on monochlorination gives only one chloro derivative, then A is
(a) tert-butyl chloride (b) sec-butyl chloride
(c) isobutyl chloride (d) n-butyl chloride

RESPONSE GRID					
	23. (a)(b)(c)(d)	**24.** (a)(b)(c)(d)	**25.** (a)(b)(c)(d)	**26.** (a)(b)(c)(d)	**27.** (a)(b)(c)(d)
	28. (a)(b)(c)(d)	**29.** (a)(b)(c)(d)	**30.** (a)(b)(c)(d)	**31.** (a)(b)(c)(d)	**32.** (a)(b)(c)(d)
	33. (a)(b)(c)(d)	**34.** (a)(b)(c)(d)	**35.** (a)(b)(c)(d)	**36.** (a)(b)(c)(d)	**37.** (a)(b)(c)(d)

Space for Rough Work

38. Read the following statements and choose the correct answer

(i) The boiling points of isomeric haloalkanes decrease with increase in branching.

(ii) Among isomeric dihalobenzenes the para-isomers have higher melting point than their ortho and meta-isomers.

(iii) The isomeric dihalobenzene have large difference in their boiling and melting points

(iv) The isomeric dihalobenzene have nearly same boiling point.

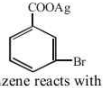
(a) (i), (ii) and (iii) are correct
(b) (i) and (iii) are correct
(c) (ii) and (iv) are correct
(d) (i), (ii) and (iv) are correct

39. Chloroform cannot be prepared from which of the following?

(a) CH_3OH (b) C_2H_5OH
(c) CH_3CHO (d) $(CH_3)_2CO$

40. Silver benzoate reacts with bromine to form

(a)  (b) 

(c)  (d) C_6H_5Br

41. Benzene reacts with n-propyl chloride in the presence of anhydrous $AlCl_3$ to give

(a) 3 – Propyl – 1 – chlorobenzene
(b) n-Propylbenzene
(c) No reaction
(d) Isopropylbenzene

42. Match the columns

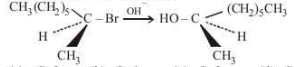
Column - I		Column - II
A.	$C_2H_6 \xrightarrow{Cl_2 / UV\ light} C_2H_5Cl$	I. Finkelstein reaction
B.	$C_6H_5NH_2 \xrightarrow[273-278K]{NaNO_2+HCl/Cu_2Cl_2} C_6H_5Cl$	II. Free radical substitution
C.	$CH_3Cl + NaI \longrightarrow CH_3I + NaCl$	III. Swarts reaction
D.	$CH_3 - Br + AgF \longrightarrow CH_3F + AgBr$	IV. Sandmeyer's reaction

(a) A – II; B – IV; C – I; D – III
(b) A – II; B – III; C – I; D – IV
(c) A – III; B – I; C – IV; D – II
(d) A – IV; B – III; C – I; D – II

43. Which of the following statements is correct?

(a) S_N2 reactions of optically active halides are accompanied by inversion of configuration.
(b) S_N1 reactions of optically active halides are accompanied by racemisation.
(c) Carbocation formed in S_N1 reaction is sp^2 hybridized.
(d) All of the above.

44. The reaction is described as



(a) S_E2 (b) S_N1 (c) S_N2 (d) S_N0

45. Which of the following is not used in Friedel-Crafts reaction?

(a) N–Phenyl acetanilide (b) Bromobenzene
(c) Benzene (d) Chlorobenzene

RESPONSE GRID				
	38. (a)(b)(c)(d)	**39.** (a)(b)(c)(d)	**40.** (a)(b)(c)(d)	**41.** (a)(b)(c)(d)	**42.** (a)(b)(c)(d)
	43. (a)(b)(c)(d)	**44.** (a)(b)(c)(d)	**45.** (a)(b)(c)(d)		

CHEMISTRY CHAPTERWISE SPEED TEST-52			
Total Questions	45	Total Marks	180
Attempted		Correct	
Incorrect		Net Score	
Cut-off Score	37	Qualifying Score	59
Success Gap = Net Score – Qualifying Score			
Net Score = (Correct × 4) – (Incorrect × 1)			

Space for Rough Work

CHEMISTRY

Alcohols, Phenols and Ethers

Speed TEST 53 Chapter-wise

No. of Questions	Maximum Marks	Time
45	180	1 Hour

GENERAL INSTRUCTIONS

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1. Diethyl ether reacts, inspite of its usual inert nature, with :
(a) Dilute suphuric acid
(b) Dilute sodium hydroxide
(c) Boron trifluoride
(d) Metallic sodium

2. *n*-Propyl alcohol and isopropyl alcohol can be chemically distinguished by which reagent?
(a) PCl_5
(b) Reduction
(c) Oxidation with potassium dichromate
(d) Ozonolysis

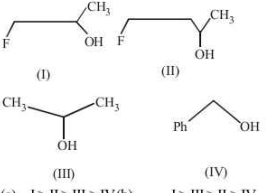
3. Which of the following reactions will not result in the formation of anisole?
(a) Phenol + dimethyl sulphate in presence of a base
(b) Sodium phenoxide is treated with methyl iodide
(c) Reaction of diazomethane with phenol
(d) Reaction of methylmagnesium iodide with phenol

4. Intermolecular hydrogen bonding is strongest in :
(a) Methylamine (b) Phenol
(c) Formaldehyde (d) Methanol

5. Vinyl carbinol is
(a) $HO-CH_2-CH=CH_2$
(b) $CH_3C(OH)=CH_2$
(c) $CH_3-CH=CH-OH$
(d) $CH_3-C(CH_2OH)=CH_2$

6. Lucas reagent is
(a) Conc. HCl and anhydrous $ZnCl_2$
(b) Conc. HNO_3 and hydrous $ZnCl_2$
(c) Conc. HCl and hydrous $ZnCl_2$
(d) Conc. HNO_3 and anhydrous $ZnCl_2$

7. The order of reactivity of the following alcohols towards conc. HCl is

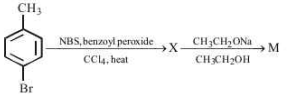


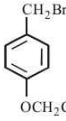
(a) I > II > III > IV (b) I > III > II > IV
(c) IV > III > II > I (d) IV > III > I > II

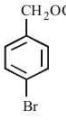
RESPONSE GRID					
1. (a)(b)(c)(d)	2. (a)(b)(c)(d)	3. (a)(b)(c)(d)	4. (a)(b)(c)(d)	5. (a)(b)(c)(d)
6. (a)(b)(c)(d)	7. (a)(b)(c)(d)			

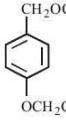
Space for Rough Work

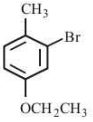
8. What is the major product M in the following reaction ?



(a) 

(b) 

(c) 

(d) 

9. Epichlorohydrin is
(a) 3-Chloropropane
(b) 3-Chloropropan-1-ol
(c) 3-Chloro-1, 2-epoxypropane
(d) None of these

10. CH_3CH_2OH can be converted into CH_3CHO by _____
(a) catalytic hydrogenation
(b) treatment with $LiAlH_4$
(c) treatment with pyridinium chlorochromate
(d) treatment with $KMnO_4$

11. In Williamson synthesis if tertiary alkyl halide is used than
(a) ether is obtained in good yield
(b) ether is obtained in poor yield
(c) alkene is the only reaction product
(d) a mixture of alkene as a major product and ether as a minor product forms.

12. Denaturation of alcohol is the
(a) mixing of $CuSO_4$ (a foul smelling solid) and pyridine (to give the colour) to make the commercial alcohol unfit for drinking
(b) mixing of $CuSO_4$ (to give the colour) and pyridine (a foul smelling solid) to make the commercial alcohol unfit for drinking
(c) mixing of $Cu(OAc)_2$ and ammonia to make the commercial alcohol unfit for drinking
(d) mixing of $Cu(OAc)_2$ and pyridine to make the commercial alcohol unfit for drinking

13. 2-Phenylethanol may be prepared by the reaction of phenylmagnesium bromide with
(a) HCHO (b) CH_3CHO
(c) CH_3COCH_3 (d) 

14. Arrange the following in increasing order of their acidity?
o–cresol(a), salicyclic acid(b), phenol(c)
(a) c < a < b (b) b < c < a
(c) a < b < a (d) a < c < b

15. Which of the following is most reactive towards aqueous HBr ?
(a) 1-Phenyl-1-propanol
(b) 1-Phenyl-2-propanol
(c) 3-Phenyl-1-propanol
(d) All are equally reactive

16. The ionization constant of phenol is higher than that of ethanol because :
(a) phenoxide ion is bulkier than ethoxide
(b) phenoxide ion is stronger base than ethoxide
(c) phenoxide ion is stabilized through delocalization
(d) phenoxide ion is less stable than ethoxide

17. Rectified spirit is a mixture of
(a) 95% ethyl alcohol + 5% water
(b) 94% ethyl alcohol + 4.53 water
(c) 94.4% ethyl alcohol + 5.43% water
(d) 95.87% ethyl alcohol + 4.13% water

18. Ethanol is prepared industrially by
(a) hydration of ethylene (b) fermentation of sugar
(c) Both the above (d) None of these

19. Mechanism of acid catalysed hydration reaction involves
(i) Protonation of alkene to form carbocation by electrophilic attack of H_3O^+
(ii) Nucleophilic attack of water on carbocation.
(iii) Deprotonation to form alcohol.
(a) (i) and (ii) (b) (i) and (iii)
(c) (i), (ii) and (iii) (d) (ii) and (iii)

RESPONSE GRID				
	8. (a)(b)(c)(d)	**9.** (a)(b)(c)(d)	**10.** (a)(b)(c)(d)	**11.** (a)(b)(c)(d)	**12.** (a)(b)(c)(d)
	13. (a)(b)(c)(d)	**14.** (a)(b)(c)(d)	**15.** (a)(b)(c)(d)	**16.** (a)(b)(c)(d)	**17.** (a)(b)(c)(d)
	18. (a)(b)(c)(d)	**19.** (a)(b)(c)(d)			

Space for Rough Work

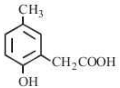
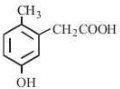
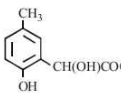
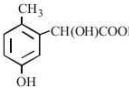
20. Match the columns

Column-I		Column-II
A.	Methanol	I. Conversion of phenol to *o*-hydroxysalicylic acid
B.	Kolbe's reaction	II. Wood spirit
C.	Williamson's synthesis	III. Heated copper at 573 K
D.	Conversion of 2° alcohol to ketone	IV. Reaction of alkyl halide with sodium alkoxide

(a) A – IV; B – III; C – II; D – I
(b) A – II; B – IV; C – I; D – III
(c) A – II; B – I; C – IV; D – III
(d) A – III; B – II; C – I; D – IV

21. Absolute alcohol (100% alcohol) is prepared by distilling rectified spirit over
(a) Na (b) $CaCl_2$
(c) Mg (d) $Mg(OC_2H_5)_2$

22. *p*-cresol reacts with chloroform in alkaline medium to give the compound A which adds hydrogen cyanide to form, the compound B. The latter on acidic hydrolysis gives chiral carboxylic acid. The structure of the carboxylic acid is

(a) 
(b) 
(c) 
(d) 

23. Which one of the following will show the highest pH value ?
(a) *m*–nitrophenol. (b) *p*–nitrophenol.
(c) *o*–nitrophenol. (d) Both (b) and (c).

24. Which of the following compounds is resistant to nucleophilic attack by hydroxyl ions?
(a) Methyl acetate (b) Acetonitrile
(c) Acetamide (d) Diethyl ether

25. Zerevitinov's determination of active hydrogen in a compound is based upon its reaction with
(a) Na (b) CH_3Mgl
(c) Zn (d) Al

26. Williamson's synthesis is used to prepare
(a) acetone (b) diethyl ether
(c) P.V.C. (d) bakelite

27. Which of the following statements are correct ?
(i) Ethanol mixed with methanol is called denatured alcohol.
(ii) Excess of methanol in body may cause blindness.
(iii) In the body methanol is oxidised to methanoic acid.
(iv) A methanol poisoned patient is treated by giving intravenous injections of ethanoic acid.
(a) (i), (ii) and (iii) (b) (ii), (iii) and (iv)
(c) (i) and (v) (d) (i), (iii) and (iv)

28. In the following sequence of reactions,

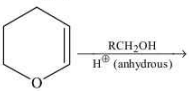
$$CH_3CH_2OH \xrightarrow{P+I_2} A \xrightarrow[ether]{Mg} B \xrightarrow{HCHO} C \xrightarrow{H_2O} D$$

the compound D is
(a) propanal (b) butanal
(c) *n*-butyl alcohol (d) *n*-propyl alcohol

29. When wine is put in air, it becomes sour due to
(a) bacteria
(b) oxidation of C_2H_5OH to CH_3COOH
(c) virus
(d) formic acid formation

30. Which of the following diols would cleave into two fragments with HIO_4
(a) 1, 3-hexanediol (b) 2, 4-hexanediol
(c) 1, 6-hexanediol (d) 3, 4-hexanediol

31. The major product of the following reaction is



(a) a hemiacetal (b) an acetal
(c) an ether (d) an ester

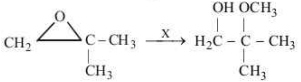
32. $H_2COH \cdot CH_2OH$ on heating with periodic acid gives:
(a) 2 HCOOH (b) 
(c) 2  (d) $2CO_2$

33. Victor Meyer's test is not given by
(a) $(CH_3)_3COH$ (b) C_2H_5OH
(c) $(CH_3)_2CHOH$ (d) $CH_3CH_2CH_2OH$

RESPONSE GRID					
	20. ⓐⓑⓒⓓ	**21.** ⓐⓑⓒⓓ	**22.** ⓐⓑⓒⓓ	**23.** ⓐⓑⓒⓓ	**24.** ⓐⓑⓒⓓ
	25. ⓐⓑⓒⓓ	**26.** ⓐⓑⓒⓓ	**27.** ⓐⓑⓒⓓ	**28.** ⓐⓑⓒⓓ	**29.** ⓐⓑⓒⓓ
	30. ⓐⓑⓒⓓ	**31.** ⓐⓑⓒⓓ	**32.** ⓐⓑⓒⓓ	**33.** ⓐⓑⓒⓓ	

Space for Rough Work

34. What is X in the following reaction ?



(a) CH_3OH, H_2SO_4

(b) $CH_3OH, CH_3O^- \overset{+}{Na}$

(c) H_2O / H_2SO_4 followed by CH_3OH

(d) CH_3MgBr / ether followed by H_3O^+

35. Which of the following pairs of reagents would give 4 -methyl-2-pentanol ?

(a) $(CH_3)_2CHLi, CH_3COCH_3$

(b) $(CH_3)_2CHCH_2Li, CH_3CHO$

(c) $(CH_3)_2CHLi, CH_3CH_2CHO$

(d) $CH_3CH_2Li, (CH_3)_2CH.CHO$

36. Which of the following cannot be made by reduction of ketone or aldehyde with $NaBH_4$ in methanol ?

(a) 1 - butanol (b) 2 - butanol

(c) 2 - methyl - 1- propanol (d) 2 - methyl - 2- propanol

37. Osmium tetraoxide is a reagent used for

(a) hydroxylation of acetylenes

(b) hydroxylation of olefins to give *cis*-diols

(c) hydroxylation of olefins to form trans- diols

(d) hydroxylation of carbonyl compounds

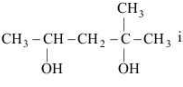
38. The reaction of sodium ethoxide with ethyl iodide to form diethyl ether is termed

(a) electrophilic substitution

(b) nucleophilic substitution

(c) electrophilic addition

(d) radical substitution

39. The IUPAC name of  is

(a) 1, 1-dimethyl-1, 3-butanediol

(b) 2-methyl-2, 4-pentanediol

(c) 4-methyl-2, 4-pentanediol

(d) 1, 3, 3-trimethyl-1, 3-propanediol

40. Give IUPAC name of the compound given below

(a) 2-Chloro-5-hydroxyhexane

(b) 2-Hydroxy-5-chlorohexane

(c) 5-Chlorohexane-2-ol

(d) 2-Chlorohexan-5-ol

41. Aspirin is an acetylation product of

(a) p-Dihydroxybenzene (b) o-Hydroxybenzoic acid

(c) o-Dihydroxybenzene (d) m-Hydroxybenzoic acid

42. Acetic anhydride reacts with diethyl ether in the presence of anhydrous $AlCl_3$ to give

(a) CH_3COOCH_3 (b) $CH_3CH_2COOCH_3$

(c) $CH_3COOCH_2CH_3$ (d) CH_3CH_2OH

43. Formation of which compound given below from 1 - butanol needs an oxidising agent?

(a) $CH_3CH_2CH_2CH_2Br$ (b) $CH_3CH_2CH_2CH=O$

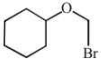
(c) $(CH_3CH_2CH_2CH_2)_2O$ (d) $CH_3-CH_2CH=CH_2$

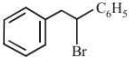
44. $o-\text{Xylene} \xrightarrow{HNO_3} X \xrightarrow[H_2SO_4]{\text{Phenol}} Y$. The product Y is

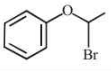
(a) Phthalic acid (b) Isophthalic acid

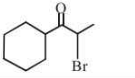
(c) Phenolphthalein (d) o-Hydroxysulphonic acid

45. Which of the following , upon treatment with tert-BuONa followed by addition of bromine water, fails to decolourize the colour of bromine?

(a) 

(b) 

(c) 

(d) 

RESPONSE GRID

34. ⓐⓑⓒⓓ	**35.** ⓐⓑⓒⓓ	**36.** ⓐⓑⓒⓓ	**37.** ⓐⓑⓒⓓ	**38.** ⓐⓑⓒⓓ
39. ⓐⓑⓒⓓ	**40.** ⓐⓑⓒⓓ	**41.** ⓐⓑⓒⓓ	**42.** ⓐⓑⓒⓓ	**43.** ⓐⓑⓒⓓ
44. ⓐⓑⓒⓓ	**45.** ⓐⓑⓒⓓ			

CHEMISTRY CHAPTERWISE SPEED TEST-53			
Total Questions	45	Total Marks	180
Attempted		Correct	
Incorrect		Net Score	
Cut-off Score	38	Qualifying Score	62
Success Gap = Net Score – Qualifying Score			
Net Score = (Correct × 4) – (Incorrect × 1)			

Space for Rough Work